



Background

- 57 million Americans (18.7%) have a disability (1)
- Individuals with disabilities face challenges related to resources, economic stability, healthcare access, and education (2, 3, 4, 5, 6)
- The ADA defines disability as a physical or mental impairment that limits major life activities or a perceived impairment (8)
- Dental caries and disability are influenced by proximal, intermediate, and socio-structural factors (5, 7)
- Research on the relationship between dental caries, disability, socioeconomic status, and food security is limited (5)

Objective

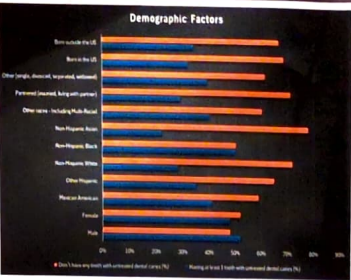
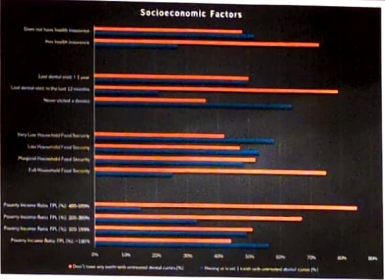
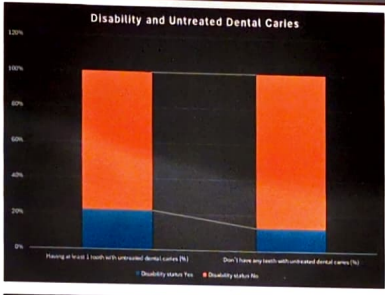
- To explore the interplay between demographic and socioeconomic status, on the disability and untreated dental caries relationship

Methods

- Data source:** National Health and Nutrition Examination Survey (NHANES) for the cycle of 2013-2014
- Main outcome:** untreated dental caries, summarized on the tooth level, defined as cavitated lesions that have not been filled or treated; root caries and third molars were excluded
- Main Predictor variable:** disability status, summarized using six binary questions about serious difficulties in daily activities (Hearing, Seeing, Concentrating, Walking, Dressing, Running errands). Respondents were classified as disabled if they answered "yes" to any question.

Statistical analyses

- Descriptive statistics were calculated accounting for NHANES complex sampling design. Continuous data were summarized with weighted means and standard deviations; categorical data with weighted frequencies and percentages.
- Bivariate associations between participants with and without untreated caries were analyzed using Pearson Chi-square tests.
- Weighted multivariate logistic regression models estimated the relationship between untreated dental caries and disability status, controlling for demographic and socioeconomic factors using SAS v9.4.



Odds Ratio Estimates for the association between Disability and Untreated Dental Caries among adults aged 20-64 years old: 2013-2014 NHANES

Model Variables	Model 1	Model 2	Model 3
Main predictor (Disability Status)	OR (Wald 95% CI)	OR (Wald 95% CI)	OR (Wald 95% CI)
Disabled (yes vs no)	1.83 (1.60, 2.11) **	1.89 (1.61, 2.23) **	1.30 (1.11, 1.53) **
Demographic Characteristics			
Age		0.95 (0.98, 1.00)	1.00 (0.99, 1.01)
Gender (Female vs male)		0.80 (0.64, 0.99) *	0.81 (0.63, 1.04)
Marital Status (Married/Living with partner vs other)		0.63 (0.49, 0.80) **	0.84 (0.65, 1.08)
Place of Birth (Born in US vs born outside the US)		0.97 (0.74, 1.24)	1.29 (0.89, 1.88)
Race (Mexican American Vs Non-Hispanic White)		1.64 (1.29, 2.07) *	0.85 (0.63, 1.16)
Race (Non-Hispanic Black Vs Non-Hispanic White)		2.23 (1.68, 2.95) **	1.58 (1.18, 2.11) **
Race (Other Hispanic vs Non-Hispanic White)		1.30 (1.03, 1.65)	0.84 (0.65, 1.08)
Race (Other Races Non-Hispanic White)		0.95 (0.67, 1.34)	1.01 (0.70, 1.45)
Socioeconomic Characteristics			
Education (Lower vs Higher than High school)			1.83 (1.41, 2.38) **
Poverty Income Ratio (100%-199% FPL vs 400%-599% FPL)			2.35 (1.89, 2.93) **
Poverty Income Ratio (200%-399% FPL vs 400%-599% FPL)			1.83 (1.53, 2.20)
Poverty Income Ratio (<100% FPL vs 400%-599% FPL)			2.95 (2.12, 4.09) **
Health Insurance (no vs yes)			1.38 (1.14, 1.67) **
Last visit to the dentist (>1 yr vs last 12 months)			2.42 (1.96, 3.00) *
Last visit to the dentist (Never vs last 12 months)			2.81 (1.61, 4.92) *
Household Food Security (Marginal vs Full)			1.32 (0.92, 1.91)
Household Food Security (Low vs Full)			1.50 (0.95, 2.37)
Household Food Security (Very low vs Full)			1.68 (1.19, 2.38) *

Note. CI=confidence interval, OR=odds ratio, FPL=federal Poverty Level, * P<0.05 ** P<0.01.
Model 1: Baseline model (Disability status and untreated tooth caries)
Model 2: Model 1 + Demographic Indicators (Age, Gender, Marital Status, Place of Birth and Race)
Model 3: Model 2 + Socioeconomic Indicators (Education status, poverty income ratio, health insurance status, last visit to the dentist, household food security)

Results

- Having a disability increased the odds of having at least one permanent tooth with dental caries by 30% (OR=1.3, 95%CI:1.11,1.53) following adjustment for demographic and socioeconomic characteristics.
- Race, education, poverty income ratio, health insurance status, last visit to the dentist and household food security were all associated with untreated dental caries.

Conclusion

- Untreated dental caries is associated with disability and is heavily influenced by socioeconomic inequalities.
- Future research should focus on assessing the causal role that disability has on having untreated dental caries and if interventions introduced early in life can improve dental care access among this vulnerable population.

Resources

